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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,901	12/04/2003	Alan Edward Rosenbluth	YOR920030339US1	9474
29683	7590	07/22/2005		
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212				
			EXAMINER GUTIERREZ, KEVIN C	
			ART UNIT 2851	PAPER NUMBER

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/727,901	Applicant(s) ROSENBLUTH, ALAN EDWARD	
	Examiner Kevin Gutierrez	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 3-7 and 11-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1,2 and 8-10 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. <u>July 14, 2004</u> .                               |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>May 21, 2004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

*DETAILED ACTION*

*Election/Restrictions*

1. Applicant's election without traverse of claims 1, 2 and 8-10 in the reply filed on June 29, 2005 is acknowledged.
2. Claims 3-7 and 11-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on June 29, 2005.

*Specification*

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

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disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the quantity of words in the abstract exceeds 150. Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities: page 11, line 19 "...shapes, constraining a limiting intensity parameter..." fails to provide proper antecedent basis (see underlined text, insert the term "first" between the two underlined text as suggested by examiner).

Appropriate correction is required.

#### ***Claim Objections***

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

a. Within claim 3, line 11 "...constraining a limiting intensity..." and line 17, "...constraining the first limiting intensity..." (see underlined text, insert the term "first" between the two underlined text as suggested by the examiner).

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1, 2 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Miecher et al (2003/0048458).

Regarding claims 1 and 8, Miecher et al teaches "illuminating a lithographic mask (Paragraph 0002, lines 8-10) with a source of light from different directions (Paragraph 0044, lines 8-9) such that intensities of a plurality of incident beams of light provide a largest possible integrated process window defined in terms of an allowed range for defining shapes (Paragraph 0034, lines 3-4), comprising imposing, through application of at least one set of constraints (Paragraph 0034, lines 3-5), a first set of intensity parameters for representing maximum possible intensities (Paragraph 0008, line 5) that can be permitted for overexposed tolerance positions and a second set of intensity parameters for representing minimum possible intensities (Paragraph 0008, lines 9-10) that can be permitted for underexposed tolerance positions; defining, for each of a plurality of different focal ranges

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(Paragraph 0033, lines 4-8), at least one parameter for each of the first set (Paragraph 0008, line 5) and the second set (Paragraph 0008, lines 9-10); and, determining optimum source intensities using a linear program (Paragraph 0090, lines 5-6) and constraints that comprise at least said one set of constraints (Paragraph 0033, lines 9-11), where the determined optimum source intensities maximize an integrated range of dose and focal variations (Paragraph 0034, lines 3-4 and lines 14-16) without causing printed shapes to depart from the allowed range.”

Regarding claims 2 and 9, Miecher et al teaches “where boundaries of the process window impose shape limits corresponding to at least one of underexposed and overexposed conditions (Paragraph 0004, lines 24-27).”

Regarding claim 10, Miecher et al “where the mask is used to project patterns onto a wafer (Paragraph 0038, lines 12-13).”

### *Conclusion*

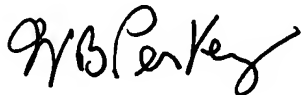
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hansen (US 20040156029) teaches a method for optimizing an illumination source using a full resist simulation.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Gutierrez whose telephone number is (571)-272-5922. The examiner can normally be reached on Monday-Friday: 7:30 a.m. - 4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**William Perkey**  
**Primary Examiner**

Kevin Gutierrez  
Examiner  
Art Unit 2851

July 14, 2005